AMENDMENTS TO THE SPECIFICATION:

Delete paragraph [0058] at page 12, and replace with the following:

A set of driving pulses, which are output for example from a controller 7 (shown in Fig. 2A) and which has, for example, a saw-tooth waveform as shown in Fig. 1C is applied or supplied to the piezoelectric element 3 of the drive mechanism 1a. When the set of the driving pulses is gradually changed as indicated by 7a, the piezoelectric element 3 extends and the drive member 4 is moved in the forward direction. In accordance with this movement, the moving body 5 is moved together with the drive member 4 (Fig. 1A(2)).

Delete paragraph [0064] at page 13, and replace with the following:

The drive mechanism 1 is of the element-fixed type. A driving shaft 4 which serves as a drive member is connected to an end of a piezoelectric element 3 in an extending and contracting direction. A moving body 5 which serves as an driven member is frictionally engaged with the driving shaft 4. The moving body 5 can be axially moved along the driving shaft 4. A controller 7 is connected to the piezoelectric element 3. When a set of generated driving pulses is applied, the piezoelectric element 3 extends or contracts in accordance with the voltage in a backward or forward direction 9.

Delete paragraph [0066] at page 14, and replace with the following:

Fig. 2B is a view illustrating driving of the drive mechanism of the invention. An example of the first set of driving pulses is a saw-tooth voltage. When a set of driving pulses of the saw-tooth waveform is applied to the piezoelectric element 3, the piezoelectric element 3 is displaced in accordance with

the waveform of the set of the driving pulses, and the driving shaft 4 is displaced in the saw-tooth waveform 8a or 8b, whereby the moving body 5 is moved. Specifically, when the piezoelectric element conducts vibration having saw-tooth displacements in which the piezoelectric element slowly extends and abruptly contracts, also the driving shaft 4 conducts similar motion 8a, and the moving body 5 repeats "non-slipping" and "slipping" according to the above-described principle, with the result that the moving body 5 is moved in the direction of "+". In contrast with this, when the piezoelectric element 3 conducts vibration having saw-tooth displacements in which the piezoelectric element abruptly extends and slowly contracts, also the driving shaft 4 conducts similar motion 8b, and the moving body 5 repeats "slipping" and "non-slipping", with the result that the moving body 5 is moved in the direction of "-".

Delete paragraph [0068] at page 15, and replace with the following:

Fig. 3A is a view illustrating the effect of reducing the frictional force. The figure shows a force F which is required for forcedly displacing the moving body 5 when a force in the direction of "+" is applied to the moving body of the drive mechanism having the configuration shown in Fig. 3A. The ordinate of Fig. 3B indicates the force required for forcedly displacing the moving body 5. In the graph, the symbol "x" indicates a forced displacement in the direction of "+", and the symbol "o" indicates a forced displacement in the direction of "-". When the driving shaft 4 does not vibrate, i.e., when the vibration of the driving shaft has the waveform indicated by the reference numeral 8s, the force required for moving the moving body 5 in either of the directions of "+" and "-" is Fs <u>as indicated by 9s and 9s'</u>. This force is referred to as the set frictional force. When the driving shaft 4 vibrates in a sinusoidal waveform indicated by 8t, the force required for moving the moving body is smaller than the set frictional force Fs, and reduced in both the directions of "+" and "-" as indicated by 9t and 9t'. When the amplitude of the

sinusoidal wave of the driving shaft 4 is increased as indicated by 8u, the force required for moving the moving body is further reduced as indicated by 9u and 9u', so that the effect of reducing the frictional force can be further enhanced. When the frequency of the vibration of the driving shaft 4 is raised as indicated by 8v, the force required for moving the moving body is further reduced as indicated by 9v and 9v', so that the effect of reducing the frictional force can be further enhanced.

Delete paragraph [0070] at page 17, and replace with the following:

Fig. 4A is the diagram of the drive mechanism. The effect of reducing the frictional force is realized not only when the driving shaft 4 vibrates in a sinusoidal waveform, but also when the driving shaft vibrates in an approximately saw-tooth waveform such as that shown in Fig. [[4]] 4B. When the driving shaft conducts vibration of an approximately saw-tooth waveform in which the driving shaft slowly extends and abruptly contracts as indicated by 8x, for example, the moving body 5 is moved in the direction of "+". During a period when the driving shaft 4 slowly extends, the moving body can be moved in the direction of "+" by a force which is smaller than the force Fs that is required during a non-vibrating period as indicated by 9x. As described above, when the driving shaft 4 abruptly contracts, the moving body 5 is moved in the direction of "+" because of slippage with respect to the driving shaft 4, and hence the moving body cannot be forcedly displaced.

Delete paragraph [0071] at page 17, and replace with the following:

By contrast, when the driving shaft conducts vibration 8y of an approximately saw-tooth waveform in which the driving shaft abruptly extends and slowly contracts, the moving body 5 is moved in the direction of "-". During a period when the driving shaft 4 slowly contracts, the moving body can be moved in

the direction of "-" by a force which is smaller than the force Fs that is required during a non-vibrating period as indicated by 9y'. When the driving shaft 4 abruptly extends, the moving body 5 is moved in the direction of "-" because of slippage with respect to the driving shaft 4, and hence the moving body cannot be forcedly displaced.

Delete paragraph [0075] at page 20, and replace with the following:

[[Fig.]]Figs. 7A and 7B show[[s]] a relationship between the velocity of the moving body and the effect of reducing the frictional force, and the duty ratio. As shown in Fig. 7A, when the duty ratio exceeds 0.15, for example, the moving body begins to be moved in the direction of "+", and, when the duty ratio is 0.3, the movement velocity of the moving body in the direction of "+" is maximum. When the duty ratio is further increased, the movement velocity is abruptly reduced. When the duty ratio is 0.45, movement of the moving body is 0. When the duty ratio exceeds 0.55, the moving body begins to be moved in the direction of "-", and, when the duty ratio is 0.7, the movement velocity of the moving body in the direction of "-" is maximum. When the duty ratio is further increased, the movement velocity is abruptly reduced. When the duty ratio is 0.85 or more, movement of the moving body is 0.

Delete paragraph [0078] at page 21, and replace with the following:

Rectangular voltages which are actually used in the drive mechanism are specifically shown in [[Fig.]]Figs. 8A-8G. In the figure, each numeral value indicates the value of the duty ratio d. The waveform of Fig. 8A in which the duty ratio d is equal to 0 can be used, for example, in the case where the moving body is not to be moved, and the frictional force is to be kept large. The waveform of Fig. 8B in which the duty ratio d is equal to 0.1 can be used, for example, in the case where the moving body is not to be moved, and the frictional force is to be slightly reduced. The waveform of Fig. 8C in

which the duty ratio d is equal to 0.3 can be used, for example, in the case where the moving body is to be moved in the direction of "+". The waveform of Fig. 8D in which the duty ratio d is equal to 0.5 can be used, for example, in the case where the moving body is not to be moved, and the frictional force is to be largely reduced. The waveform of Fig. 8E in which the duty ratio d is equal to 0.7 can be used, for example, in the case where the moving body is to be moved in the direction of "-". The waveform of Fig. 8F in which the duty ratio d is equal to 0.9 can be used, for example, in the case where the moving body is not to be moved, and the frictional force is to be slightly reduced. The waveform of Fig. 8G in which the duty ratio d is equal to 1 can be used, for example, in the case where the moving body is not to be moved, and the frictional force is to be kept large.

Delete paragraph [0079] at page 22, and replace with the following:

In the case where the duty ratio is 0.1 or 0.9 which is in a range of larger or smaller values, the frictional force is differentiated depending on the direction. When the duty ratio is 0.1, for example, the degree of reduction of the frictional force in the direction of "+" is larger, and that in the direction of "-" is smaller. [[Fig.]]Figs. 9A and 9B show[[s]] means for canceling this phenomenon.

Delete paragraph [0082] at page 23, and replace with the following:

[[Fig.]]Figs. 10A-10D shows~~ an example~~ examples in which the drive mechanism 1 is applied to a control lever of a lever mechanism. As shown in Fig. 10B, in a drive mechanism 20, a driving shaft or drive member 32 is fixed to an end of a piezoelectric element 30, and a moving body or driven member 40 is frictionally engaged with the driving shaft 32. A fixing member 24 is coupled with another end of the piezoelectric element 30 in order to fix the piezoelectric element. The driving shaft 32 is inserted through and supported by small holes formed in walls 26 and 28 so that the driving shaft is

supported to be axially movable. The fixing member 24, and the walls 26 and 28 are connected to one another by a connecting member 22. When a set of driving pulses is applied to the piezoelectric element 30, the driving shaft 32 is caused to vibrate by vibration of the piezoelectric element, and the moving body 40 can be moved or the frictional force between the moving body 40 and the driving shaft 32 can be reduced in accordance with the waveform of the driving pulses.

Delete paragraph [0083] at page 24, and replace with the following:

As show in Fig. 10A, the [[The]] moving body 40 has support portions 46 and 48 in order to be frictionally engaged with the driving shaft 32. The support portions 46 and 48 are urged in mutually opposite directions, and clampingly frictionally engaged with the driving shaft 32 which is passed through a communication hole 47 formed between the two support portions 46 and 48. A small piece 42 is disposed on the support portions, and a small hole 44 into which a projection 58 disposed on a lever shaft 56 is to be passed is formed in the piece.

Delete paragraph [0088] at page 26, and replace with the following:

[[Fig.]]Figs. 11A-11H shows~~ an example~~ examples in which the drive mechanism 1 is applied to a shutter mechanism of a camera. The shutter mechanism has a coil spring, a spring-charging actuator, and an engagement portion which constitutes a shutter. Among these components, the spring-charging actuator and the engagement portion are configured by the drive mechanism. As shown in Fig. 11B, in a drive mechanism 20a, a driving shaft or drive member 32 is fixed to an end of a piezoelectric element 30, and a moving body or driven member 40 is frictionally engaged with the driving shaft 32. A fixing member 24 is coupled with another end of the piezoelectric element 30 in order to fix the piezoelectric element. The driving shaft 32 is inserted through and supported by small holes formed in walls 26 and 28 so that the driving shaft is supported to be axially

movable. The fixing member 24, and the walls 26 and 28 are connected to one another by a connecting member 22. A coil spring 34 is disposed in the periphery of the driving shaft 32. One end of the spring is connected to the wall 28, and the other end to the moving body 40. When a set of driving pulses is applied to the piezoelectric element 30, the driving shaft 32 is caused to vibrate by vibration of the piezoelectric element, and the moving body 40 can be moved or the frictional force between the moving body 40 and the driving shaft 32 can be reduced in accordance with the waveform of the driving pulses. When the moving body 40 is moved toward the wall 28, the coil spring 34 contracts in accordance with the movement of the moving body 40, and the coil spring is charged. Under the state where the coil spring is charged, the set of the driving pulses is applied to the piezoelectric element to move the moving body 40 toward the wall 26 or reduce the frictional force with the driving shaft 32. As a result, the moving body 40 can be moved at a high speed by the force exerted by the charged coil spring 34.

Delete paragraph [0089] at page 28, and replace with the following:

As show in Fig. 11A, the [[The]] moving body 40 has support portions 46 and 48 in order to be frictionally engaged with the driving shaft 32. The support portions 46 and 48 are urged in mutually opposite directions, and clampingly frictionally engaged with the driving shaft 32 which is passed through a communication hole 47 formed between the two support portions 46 and 48. A small piece 42 is disposed on the support portions, and a small hole 44 for fixing light shield plates 62 and 64 are formed in the piece.